



US – 390

VI Semester B.Sc. Examination, May 2017  
(Fresh+Repeaters)  
(CBCS – 2016 – 17 & Onwards/2013 – 14 & Onwards)  
**BIOTECHNOLOGY – VII**  
**Plant Biotechnology**

Time : 3 Hours

Max. Marks : 70

**Instruction :** Draw neat labelled diagrams wherever necessary.

**SECTION – A**

- I. Write short notes on the following : (5×2=10)
- 1) Callus
  - 2) Mericlones
  - 3) Vegetative propagation
  - 4) Intellectual property rights
  - 5) Reporter genes.

**SECTION – B**

- II. Write **any four** of the following. (4×5=20)
- 6) Describe the factors affecting micropropagation.
  - 7) Explain the role of auxins and cytokinins in plant tissue culture.
  - 8) Give an account on the selection of somaclonal variants.
  - 9) Describe the methods of isolation of protoplasts.
  - 10) Write a note on trade secrets.

**SECTION – C**

- III. Answer **any three** of the following. (3×10=30)
- 11) Describe the procedure of anther culture. Add a note on its applications.
  - 12) Define secondary metabolites. Describe the methods of production of secondary metabolites.
  - 13) Describe the methods of protoplast fusion. Write a note on the selection of somatic hybrids.
  - 14) Describe the applications of plant tissue culture in the field of forestry.
  - 15) What is Agrobacterium mediated gene transfer ? Explain the types of vectors based on Ti-plasmid.

P.T.O.



SECTION – D

(10×1=10)

IV. Answer the following in **one** word or a sentence **each**.

- 16) Expand HEPA.
  - 17) What are elicitors ?
  - 18) Name the fungus from which gibberellic acid was discovered.
  - 19) What are heterokaryons ?
  - 20) Name the disease caused by Agrobacterium tumefaciens.
  - 21) Define somatic embryos.
  - 22) Mention any one of the limitations of edible vaccines.
  - 23) What are synthetic seeds ?
  - 24) Name any two criteria for a plant variety to be recognised under PBR.
  - 25) What is GATT ?
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VI Semester B.Sc. Examination, May 2017  
(CBCS – 2016-17 & Onwards/2013-14 & Onwards) (F + R)  
**BIOTECHNOLOGY – VIII**  
**Industrial Biotechnology**

Time : 3 Hours

Max. Marks : 70

**Instruction:** Draw *neat* labelled diagrams *wherever* necessary.

**SECTION – A**

I. Write short notes on the following :

(5×2=10)

- 1) Inoculum and its importance.
- 2) Bioreactor.
- 3) Antifoam agents.
- 4) Yoghurt.
- 5) Polyesters.

**SECTION – B**

II. Answer **any four** of the following :

(4×5=20)

- 6) Describe the mutant selection method of strain improvement.
- 7) Explain in detail about bubble column bioreactor.
- 8) Write a detailed account on the production of PHA.
- 9) Write the various steps involved in the production of Vitamin B<sub>12</sub>.
- 10) Explain the importance of microbial enzymes in food and detergent industry.

**SECTION – C**

III. Answer **any three** of the following :

(3×10=30)

- 11) Define fermenter and explain different control systems in fermenter.
- 12) Explain in detail the techniques used in separation, extraction and concentration of products.
- 13) Discuss various industrial applications of enzymes.
- 14) Explain in detail about the industrial production of microbial food.
- 15) Write a detailed account of alcoholic fermentation.

P.T.O.



## SECTION - D

IV. Answer the following in **one** word or a sentence **each** :

(10×1=10)

- 16) Mention any one organism used in amylase production.
- 17) Define biotransformation.
- 18) What is pasteurisation ?
- 19) Name the microorganism used in industrial production of glutamic acid.
- 20) What are hops ?
- 21) Who discovered penicillin ?
- 22) What is Beer wort ?
- 23) Define lyophilization.
- 24) What is molasses ?
- 25) Expand HEPA.